

REMARKS

Claims 1-14 were pending, all of which were rejected.

Claim Rejections – 35 U.S.C. §103

Claims 1-14 were rejected under 35 U.S.C. §103(a) as being unpatentable over Fanton et al. (6,707,056) (“Fanton”). Reconsideration is respectfully requested.

Independent Claim 1 recites “orienting said substrate with respect to an ellipsometer so that an elliptical light spot produced by said ellipsometer fits diagonally within said test area”. Independent Claims 5 and 11 include similar elements: “orienting said substrate with respect to said ellipsometer so that said elliptical light spot fits diagonally within said test area” (Claim 5) and “orienting said substrate with respect to said ellipsometer, so that said major axis of said elliptical light spot is approximately aligned with a diagonal of said test area” (Claim 11).

Fanton discloses in the “Summary of the Invention”, a method that “is intended to allow more uniformity at all measurement sites near the edge of the wafer around the wafer circumference.” Col. 2, lines 24-26 (emphasis added). Fanton specifically discloses that to “achieve this goal, a theta (θ) or rotational stage is used to rotate the wafer so that short axis W of the ellipse is oriented perpendicular to the wafer edge when measurements at sites near the edge are desired.” Col. 2, lines 26-29 (emphasis added).

The Examiner correctly recognized that Fanton fails to disclose that the “elliptical light fit diagonally within a test area”. The Examiner cited col. 3, lines 2-8, as teaching “that the elliptical light spot position and orient a test area for making measurements of any test site” and that “[i]n view of Fanton’s teachings, it would have been obvious ... to incorporate a method where said elliptical light spot fit diagonally within a test area....” Office Action, paragraphs B and C, pages 2-3. The cited motivation provided by the Examiner was “for improving the measurements of a selected test area of a substrate under test.” Id., paragraph C, page 3.

Applicant points out, however, that cited col. 3, lines 2-8 specifically states that “the system can be operated in a manner similar to the prior art. More specifically, the X,Y stage can be used to position the wafer with respect to the beam for any sites within the elliptical boundary 8 of Fig. 2.” Fanton then states that “when it is desired to measure sites near the wafer edge [i.e., for sites outside the elliptical boundary 8 of Fig. 2], the theta stage can be

used to rotate the wafer an amount sufficient to align the short axis of the measurement spot to be perpendicular to the edge of the wafer.” Col. 3, lines 5-8.

Thus, col. 3, lines 2-8 of Fanton state that within the elliptical boundary 8 of Fig. 2, the system is “operated in a manner similar to the prior art”, e.g., using “the X,Y stage”, and that outside the elliptical boundary 8 of Fig. 2, the wafer is rotated to “align the short axis of the measurement spot to be perpendicular to the edge of the wafer.” Nowhere in Fanton is there a suggestion to rotate the wafer to fit the elliptical light spot diagonally within a test area. Further, Applicant’s attorney is not aware of any discussion of a specific “test area” within Fanton and, thus, it is not clear how Fanton could suggest rotating the wafer to fit the light spot diagonally within a test area.

In fact, Applicant asserts that Fanton specifically teaches the contrary of using a diagonal alignment of the elliptical spot within a test area. Fanton states that outside the elliptical boundary 8 of Fig. 2, the “short axis of the measurement spot” is to be aligned “perpendicular to the edge of the wafer”. Thus, near the edge of the wafer, Fanton teaches the desirability of a perpendicular alignment, as opposed to a diagonal alignment. Further, within the elliptical boundary 8 of Fig. 2, Fanton states that the system uses the X,Y stage to position the wafer with respect to the beam. With the use of an X,Y stage, the orientation of the elliptical spot and the wafer does not change to place the spot diagonally within the test area.

Moreover, Applicant respectfully disagrees with the Examiner’s stated motivation for altering the express teachings of Fanton. The Examiner stated that the motivation is “for improving the measurements of a selected test area of a substrate under test.” As discussed above, Fanton does not address a specific test area. Additionally, Fanton, specifically states that “[i]mproved measurements near the wafer’s edge are obtained by rotating the wafer with respect to the measurement spot to insure that the short axis of the ellipse is perpendicular to the wafer edge.” Abstract. Thus, Fanton specifically teaches that “improved measurements” are obtained using a “perpendicular” alignment and does not suggest improving measurements by using a diagonal alignment.

Accordingly, Applicants respectfully submit that independent Claims 1, 5, and 11 are patentable over Fanton. Reconsideration and withdrawal of this rejection is respectfully requested. Claims 2-4 depend from Claim 1, Claims 6-10 depend from Claim 5, and Claims 12-14 depend from Claim 11 and are, therefore, likewise patentable.

Claims 1-14 are pending. For the above reasons, Applicants respectfully request allowance of Claims 1-14. Should the Examiner have any questions concerning this response, the Examiner is invited to call the undersigned at (408) 982-8202.

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